Designing and Conducting Faculty Salary Studies to Inform Decision-Making

By Ying Zhou, Beverly King, Hanyan Wang, and Danny Barreiro-Talbert

East Carolina University
About ECU and Faculty

- Fall 2019 enrollment: 28,651
- Over 2,000 instructional faculty
- 92% full-time faculty
- 51% tenured/tenure-track faculty
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- Faculty Salary Equity Study
- Focus: Gender & race/ethnicity
- Scope: Full-time instructional faculty (tenure-track and fixed-term)

2018-19
- Faculty Salary Compression Study
- Focus: Compression & inversion
- Scope: Tenure-track faculty in Academic Affairs and full-time faculty in Health Sciences

2019-2020
- Fixed-term Faculty Salary Study
- Focus: Compression & inversion
- Scope: Full-time fixed-term faculty in permanent positions in Academic Affairs

Annual Faculty Salary Benchmark Reports (CUPA-HR Data)
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Annual Faculty Salary Benchmark Reports (CUPA-HR Data)
Important Considerations in Conducting Faculty Salary Studies

- Faculty Salary Concerns
- Stakeholder Buy-in
- Transparency & Communication
- Scope of Study
- Research Design
ECU Faculty Salary Concerns

- Gender Equity
- Minority Faculty Salaries
- Salary Compression (by academic rank)
- Salary Competitiveness
- Fixed-term Faculty Salary

Dual Purposes for ECU Salary Studies:
- Identify whether there is an institutional-wide equity issue
- Identify individuals (egregious cases) for salary adjustments
Who are your stakeholders?

- Faculty, especially members of the Faculty Senate or other shared governance groups
- Senior administrators
- Deans & department chairs
- Equity & legal offices

And how do you obtain buy-in?
Establishing Effective Advisory Groups

Make sure to include the "right" people.

• Composition of Advisory Groups
  • Faculty senate officers
  • Faculty welfare committee
  • Faculty representatives appointed by administrators
  • Faculty with expertise in statistics or compensation studies
  • Faculty advocates/critics
  • Divisional HR personnel
  • Chief diversity officer/university counsel/president’s representative

• Additional Resource People
  • College personnel administrators
  • Associate deans
Scope of Faculty Salary Studies

One study can’t address all concerns!

- Define clear research questions and stay focused on these questions.
- Recognize limitations of a study.
- Conduct salary studies periodically to inform decision-making.
Designing Faculty Salary Studies

Research Questions:
- What are the predictors of faculty salaries?
- Is there any evidence of institution-wide faculty salary compression by academic rank?
- Who are underpaid based on the identified salary predictors?
- How do ECU faculty salaries compare to national benchmarks?
- Did budget cuts and lack of institutional funds for promotional raises during the most recent economic downturn have a significant negative impact on the faculty promoted in those years?
Developing Methodologies

• Literature review & review of studies conducted by other institutions
  • Most common method: linear model (to predict individual salary or estimate size of compression)
  • Most common predictors: academic rank, tenure status, administrator indicator, years in rank/at institution/in academia, college, department, highest earned degree, market factors

• Review of ECU’s 2014-16 Salary Equity Study

• Consulting with ECU HR professionals and deans to understand salary practices
Questions for Deans Regarding Fixed-term Faculty Salary Practices

- What factors are considered when determining salary for a fixed-term faculty member?
- Is there a relationship between academic title at hire and initial salary level?
- Does your unit have a standard promotional raise for fixed-term faculty?
- Are there any salary compression/inversion concerns in your unit?
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Regression Analyses

Benefits
• Campus familiar with the methodology
• Ability to
  • identify significant predictors of faculty salaries
  • identify whether there is a systematic compression issue
  • calculate predicted salaries

Limitations/Challenges
• Less robust for colleges with small number of faculty and/or small numbers of faculty in certain departments or academic ranks
• Communicating statistical terms to a broad audience
2018-19 Compression Study: Considerations in Modeling Processes

Definition of salary
- Use total annual compensation or base salary?
- How should 9-month & 12-month salaries be normalized?
- How are administrative duties paid?

Proxy for market rate
- Use department (internally focused) vs. national benchmark (externally focused)?
- How should we account for significant pay differences by specialty in health science fields?
- What is an appropriate source of benchmark salaries and what is an appropriate peer group?

Tenure Status
- Should both tenure eligible and fixed-term faculty be included in one regression model?
- Are potential salary predictors for tenure eligible and fixed-term faculty salaries different?
Steps for Regression Analyses

**Data Validation**
- Performed by Divisional HR
- Correcting errors in data
- Noting factors that might impact a person’s salary
- Determining appropriate salary benchmarks

**Exploratory Analyses**
- Exploring predictors identified from literature review & by advisory groups
- Removing outliers (Cook’s D) in regression modeling
- Reviewing low-end outliers to improve model

**Final Steps**
- Selecting the best model based on model performance, ease of translation and stakeholder input
- Generating a faculty report with predicted salaries and standardized residuals for administrators
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## 2018-19 Compression Study: Variables in Regression Analyses

<table>
<thead>
<tr>
<th>Department (proxy for discipline)</th>
<th>Academic Affairs*</th>
<th>Libraries</th>
<th>Nursing</th>
<th>Allied Health</th>
<th>Brody Medical</th>
<th>Brody Science</th>
<th>Dental Medicine</th>
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<td>Y, AAMC**</td>
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<td>Academic Rank</td>
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<td>Y, AAMC</td>
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<td>Time in Rank</td>
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<td>Tenure/Fixed-term Status</td>
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<td>Hire Year–Terminal Degree Year</td>
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<tr>
<td>Supervisor/Chair</td>
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<td>Y, Chair</td>
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<td>Special Credential</td>
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<td>Years since hire</td>
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<td>R-squared</td>
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<td>0.79</td>
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</tr>
</tbody>
</table>

* Includes tenured/tenure track faculty only. Other units include both tenure eligible and fixed-term faculty.

** Association of American Medical Colleges (AAMC) benchmarks reflect discipline, specialty, academic rank, and administrative duties (such as chair, chief, etc.)
To identify systematic salary compression

Signs of systematic compression

- Estimate for time in rank was negative and statistically significant
- Estimate for time in rank was not statistically significant
- Difference between estimates for associate professor and assistant professor < ECU standard promotional raise for associate professor
- Difference between estimates for associate and full professors < ECU standard promotional raise for full professor

To identify individuals for salary review

Threshold for salary review

- Based on residuals (predicted salary – actual salary)
- Statistical outlier warning: standardized residual < -2.0 or >2.0
- ECU internal threshold for salary review: standardized residual < -.75
- Deans to make salary adjustment recommendations for identified individuals taking account into performance

2018-19 Compression Study: Use of Regression Analyses Results
Transparency and Communication

- **Online Faculty Feedback Form**
- **Provost holding two open forums for AA faculty to discuss findings**
- **Executive Summary and Final Report of the study posted on Faculty Senate website**
- **Formal report to Faculty Senate followed by a Q&A session**
- **Letters sent to individual faculty regarding their own result and the salary adjustment, if any**

*Faculty Welfare Committee*

The committee meets on the following Thursdays at 3:30 pm in 142 Rawl Annex:

- September 12, 2019
- October 10, 2019
- November 14, 2019
- December 12, 2019
- January 16, 2020 (Rawl 303)
- February 13, 2020
- March 19, 2020 (virtual meeting)
- April 9, 2020 (virtual meeting)

*Committee Resources*

2018-2019 Faculty Salary Compression Study

- Executive Summary (pdf)
- Full Report (pdf)
Selection of methodologies should be guided by principal research questions as well as actionable outcomes of the study.

Perceptions of salary issues may not align with patterns observed in salary data due to:
- variation in salary practices across campus and across years
- variation in composition of faculty across departments
- faculty turnovers, unit-specific budget situation, retention packages, special hires, and ad hoc equity adjustments

A successful study requires that IR staff spend time and effort in educating the campus about the analytical process and its results.

A successful study also requires that administrators take actions and address issues identified in the study.
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